

In the Claims:

There are no claim amendments. The status of the claims is as follows:

1. (Previously Presented) A liquid crystal device comprising:

a liquid crystal material characterized by spontaneous polarization, being responsive to an applied signal for writing data and controlling a light transmittance of said material, wherein a voltage of said signal, corresponding to an image to be displayed and switched by thin film transistor, is offset to either a single, positive or negative constant level from 0 V at said material at all times during operation, except during signal application;

wherein the value of the offset has the same polarity at all times during operation except during signal application; and

wherein the offset is applied automatically at all times during operation except during signal application.

2. (Previously Presented) The liquid crystal device of claim 1 wherein said signal is offset positively or negatively so that a light transmission through said liquid crystal material being driven by said signal is blocked.

3. (Previously Presented) A liquid crystal device comprising:

a first substrate including a first electrode on a first face thereof;

a second substrate including a second electrode on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second substrates face each other;

a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;

a first voltage generating circuit for supplying a voltage to said first electrode; and

a data signal circuit for supplying a data pulse to said second electrode,

wherein a voltage across said liquid crystal between said first and second electrodes is offset to either a single, positive or negative constant level from a reference voltage of said device at all times during operation, except during said data pulse application when an image is displayed;

wherein the value of the offset has the same polarity at all times during operation except during signal application; and

wherein the offset is applied automatically at all times during operation except during signal application.

4. (Previously Presented) The liquid crystal device in claim 3 wherein said data pulse is offset positively or negatively so that a light transmission through said liquid crystal material being driven by said pulse is blocked.

5. (Previously Presented) The liquid crystal device of any one of claims 3 or 4 wherein said second substrate has an active element electrically connected to said second electrode so as to electrically control a picture element.

6. (Previously Presented) The liquid crystal device of claim 5 wherein said voltage supplied by said first voltage generating circuit is offset so that a voltage across said liquid crystal material between said first and second electrodes is kept positive or negative with respect to said reference voltage of said device except during said data pulse application.

7. (Previously Presented) A liquid crystal panel comprising:
a first substrate including a first electrode on a first face thereof;
a second substrate including a second electrode on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second substrates face each other;
a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;
a first voltage generating circuit for supplying a voltage to said first electrode;

a data signal circuit for supplying a data pulse to said second electrode; and

a light source for emitting more than monochromatic lights, each of said monochromatic lights being emitted time divisionally toward said first or second substrates,

wherein a voltage across said liquid crystal material between said first and second electrodes is offset to either a single, positive or negative constant level from a reference voltage of said device at all times during operation, except during said data pulse application when an image is displayed;

wherein the value of the offset has the same polarity at all times during operation except during signal application; and

wherein the offset is applied automatically at all times during operation except during signal application.

8. (Previously Presented) A liquid crystal panel comprising:

a first substrate including a first electrode on a first face thereof;

a second substrate including a second electrode on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second substrates face each other;

a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;

a first voltage generating circuit for supplying a voltage to said first electrode;

a data signal circuit for supplying a data pulse to said second electrode; and

polarizer films provided on each outer face of said first and second substrates,

wherein a voltage across said liquid crystal material between said first and second electrodes is offset to either a single, positive or negative constant level from a reference voltage of said panel at all times during operation, except during said data pulse application so that said liquid crystal material blocks a light transmission through said liquid crystal material when an image is displayed;

wherein the value of the offset has the same polarity at all times during operation except during signal application; and

wherein the offset is applied automatically at all times during operation except during signal application.

9. (Previously Presented) A liquid crystal display panel comprising:

a first substrate including a common electrode on a first face thereof; a second substrate including data signal electrodes, scanning electrodes, and switching elements which are connected to one of said data signal electrodes and one of

said scanning electrodes on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second faces face each other;

a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;

a common reference voltage generating circuit for defining a reference voltage of said data signal electrode; and

a common electrode voltage generating circuit for supplying a voltage to said common electrode, wherein said common voltage is offset to either a single, positive or negative constant voltage at all times during operation when an image is displayed;

wherein the value of the offset has the same polarity at all times during operation except during signal application; and

wherein the offset is applied automatically at all times during operation except during signal application.

10. (Original) The liquid crystal display panel of claim 9 wherein said liquid crystal material having spontaneous polarization is ferroelectric liquid crystal material.

11. (Original) The liquid crystal display panel of claim 9 wherein said first substrate has a color filter.

12. (Previously Presented) A liquid crystal display panel comprising:

a first substrate including a common electrode on a first face thereof;

a second substrate including data bus lines, scanning bus lines, and switching elements which are connected to one of said data bus lines and one of said scanning bus lines on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second faces face each other;

a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates; and

a common electrode voltage generating circuit for supplying a voltage to said common electrode; and

a common reference voltage generating circuit for defining a reference voltage of said data bus lines, wherein said reference voltage is offset to either a single, positive or negative constant voltage at all times during operation when an image is displayed;

wherein the value of the offset has the same polarity at all times during operation except during signal application; and

wherein the offset is applied automatically at all times during operation except during signal application.

13. (Original) The liquid crystal display panel of claim 12 wherein said liquid crystal material having spontaneous polarization is ferroelectric liquid crystal material.

14. (Original) The liquid crystal display panel of claim 12 wherein said first substrate has a color filter.

15. (Previously Presented) The liquid crystal display panel claim 12 further comprising:

polarizer films provided on the outer faces of said first and second substrates, wherein said common voltage is offset so as that a light transmission of said liquid crystal material becomes to be block.

16. (Previously Presented) The liquid crystal display panel claim 12 further comprising:

a light source emitting a plurality of monochromatic colors, wherein each monochromatic color is emitted by said light source time divisionally in synchronism with an operation of said liquid crystal display panel.

17. (Previously Presented) A liquid crystal device comprising:

- a first substrate including a first electrode on a first face thereof;
- a second substrate including a second electrode on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second substrates face each other;
- a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;
- a first voltage generating circuit for supplying a voltage to said first electrode; and
- a data signal circuit for supplying a data pulse to said second electrode,

wherein a voltage across said liquid crystal between said first and second electrodes is offset to either a single, positive or negative constant level from a reference voltage at all times during operation;

wherein the value of the offset has the same polarity at all times during operation except during signal application; and

wherein the offset is applied automatically at all times during operation except during signal application.